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SURVEY NOTES

Vol. 13 No. 1 | Service to the State of Utah | February 1979

PROTECT YOUR MINING CLAIMS

RECORD CLAIMS WITH BLM BEFORE OCTOBER 21, 1979.

In the earliest years of western mining, claim records were kept in local mining districts, but for most of the past century these records have been recorded in the county where the claim lies. In many instances the records have become confusing and difficult to trace. Public Law 94-579 of October 21, 1976, referred to as the "Federal Land Policy and Management Act of 1976", seeks to improve upon this confused record of mining claims by adding another place in which claims must be recorded. Claims and assessment work must still be recorded with the county recorder, but now claim information must also be filed with the Bureau of Land Management. In Utah the proper office is the BLM State Office in the University Club Building, Salt Lake City.

Public Law 94-579 requires that the owner of a mining claim, lode, placer, millsite or tunnel site located before October 21, 1976 must record the following instruments with the BLM on or before October 21, 1979:

1. A copy of the original notice of location.
2. A copy of the last amended location notice, if any.
3. A map, scaled not less than ¼ inch to a mile, showing the survey or protraction grids and depicting the location of the claim.

(continued on page 3)

Peak named for Untermanns

HUSBAND & WIFE TEAM HONORED MOUNT UNTERMANN NAMED

The U. S. Board on Geographic Names has approved the name Mount Untermann for a 12,074-foot (3,680m) peak in the eastern Uintas to honor the memory of George Ernest and Billie Ruple Untermann, husband and wife geological team noted for their work on the geology of the Uinta Basin and adjacent northwest Colorado. The Untermanns were ranger-naturalists at Dinosaur National Monument, and founded and were curators of the museum in Vernal which grew into the Utah Field House of Natural History, now a state park. They also erected the first geologic signs across the eastern Uintas along State Highway 44, the "Drive Through the Ages".

Mount Untermann is one half mile north of newly designated Gabbro Pass, elevation 11,685 feet, traversed by the Uinta Highline pack trail from Lakeshore Basin to Deadman Lake basin. The pass is named for a gabbroic dike exposed in the west headwall of Lakeshore Basin and also found along strike to the west-northwest at Deadman Lake. The Untermanns were the first to note this occurrence of igneous rocks in the Uinta Mountains, and the dike appeared on their geologic map of Uintah County (UGMS Bulletin 72).

Mount Untermann and Gabbro Pass are on the Whiterocks Lake 7½° topographic quadrangle map. The area is about 2.5 miles west of Leidy Peak.

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DIGGIN'S

OIL SHALE SHAFT WILL BE SUNK

Tosco Corporation (formerly The Oil Shale Corporation), Los Angeles, has received permission from the Utah Division of Oil, Gas, and Mining to sink a 12 foot-diameter, 2,400-foot shaft on its Sand Wash Project oil shale properties 35 miles south of Vernal. Tosco has leases on 5 tracts of State of Utah land totalling 14,688 acres.

Initial field work will take 18 months to 3 years and will be followed by experimental mining. About eight acres of one lease will be taken up by the operation, mostly to stockpile the mined rock. Shale samples are to be sent to Tosco's research center at Golden, Colorado where a pilot plant will extract oil using the TOSCO II process.

Tosco estimates a 47,000 barrel per day plant processing 66,000 tons per day of raw shale will cost about one billion dollars. The proposed plant, using the TOSCO II above-ground process, will employ six 11,000 ton per day modules to extract crude shale oil, gases and by-products from crushed shale. The plant cost also includes utilities, facilities for product storage and loading, and disposal of spent shale.

Environmental studies are now being conducted at the Sand Wash Project site to acquire information for the environmental impact statement for the commercial-scale plant. Tosco has established a field headquarters in Vernal for the operation.

GEOTHERMAL LEASES

BLM received a total of $33,822.70 for geothermal leases in Millard, Sevier and Beaver counties in apparent high bids. The three leasing units are in the known geothermal resource areas of Meadow-Hatton, Monroe-Joseph and Roosevelt Hot Springs.

Union Oil Company and W. H. Hunt of Dallas, Texas, were the apparent high bidders.

TAR SAND COOKERY

The Research Institute of the Illinois Institute of Technology, Chicago, has been awarded an 18-month, $200,000 contract by the U.S. Department of Energy to investigate the use of radio frequency power (microwaves) to extract oil from Utah tar sands. An apparatus has been designed to heat a large sample of tar sand obtained from the Sunnyside deposit in Carbon County. The UGMS Petroleum Section helped make arrangements for the sampling.

CATHEDRAL WEDDING BELLS

Many UGMS staff members attended the wedding of Bruce Kaliser and Sheila Ivers at the Cathedral of the Madeline, November 25, 1978. A gala reception followed at the Fort Douglas Country Club.

The newlyweds travelled extensively in Mexico in December and visited former UGMS director Dr. William P. Hewitt and his wife, Louise, in Oaxaca. (See related story on Mexican earthquake).

MONA PEAK NOW HIGHEST

The matter of the highest peak in the Wasatch Range has been settled officially by the Utah Committee on Geographic Names with the naming of a previously unnamed prominence in the southern group of peaks which includes Mount Nebo. The newly designated high point is 11,928-foot (3,636m) Mona Peak 0.8 mile NNE from officially designated Mount Nebo, elevation 11,877 feet (3,620m).

About 0.5 mile NNE of Mona Peak is a still unnamed peak, elevation 11,474 feet (3,447m); and 0.95mile north of this peak, across Wolf Pass is North Peak, elevation 11,174 feet (3,406m). All of the peaks lie along the narrow ridge which marks the boundary between Juab and Utah counties. The area is shown on the Santaquin and Santaquin Peak 15 minute topographic quadrangle maps.

ROAN CLIFFS WELL DRY

The No. 411-2 State well, drilled by Anschutz Oil in Section 23, T. 18 S., R. 20 E., Grand County was plugged and abandoned in January at 10,789 feet total depth. The test was located 10 miles northwest of Cisco Dome in rough terrain in a previously undrilled portion of the high Roan Cliffs. Elevation of the test was 8,952 feet. Controversy had erupted over the well which was located on a large block of State lands designated "roadless", a classification made without regard to existing oil and gas leases.

The well drilled a normal sequence of Tertiary, Cretaceous and Jurassic formations but penetrated only a thin Triassic red bed section before entering Precambrian (?) granite at 10,665. The large anticline tested by the well is apparently a part of the Uncompahgre uplift over which Paleozoic formations are missing by erosion.

Anschutz may do additional drilling on the structure in the summer of 1979.

USGS CELEBRATES CENTENNIAL YEAR

The U. S. Geological Survey, established March 3, 1879, will celebrate its 100th birthday during 1979 with commemorative programs, symposia, special publications and exhibits.

Following recommendations of the National Academy of Sciences, the USGS was established by an Act of the 45th Congress that was signed by President Rutherford B. Hayes. The legislation discontinued three predecessor Territorial Surveys and consolidated their functions in the new organization. First USGS director was Clarence King, noted geologist and explorer in the West. Kings Peak in the Uintas, Utah's highest point, bears his name.

NEW CLAIM LAWS

(continued from page 1)

Information that must be included in the filing includes:

1. The name and/or number of the claim.
2. A reference by book and page to the county record of the notice and amendment.
3. The name and current mailing address of all owners of the claim.
4. The type of claim or site.
5. The date of location.
6. The legal description for the claim. On surveyed lands the description must tie the claim to the quarter section as well as the township, range, meridian and state. For claims located on currently unsurveyed lands a narrative description must be provided with such accuracy as to permit the authorized officer to identify and locate the claim on the ground.

For claims located after October 21, 1976, filing with BLM must be complete within ninety (90) days of the location date.

In addition, a copy of the recorded affidavit of assessment work or notice of intention to hold must be filed annually by December 31st of each year.

Failure to meet the requirements outlined above "shall be deemed conclusively to constitue an abandonment of the mining claim."

Among those who recognize an opportunity to assist claim owners in meeting the requirements of this law is Mineral Records, Inc., of Salt Lake City, Utah. Mineral Records has microfilmed all the records of more than 45 counties in eight (8) states and computerized that part that deals with mining claims. They plan to increase their coverage to at least 100 counties before October, 1979. In a matter of minutes they can produce an acceptable copy of recorded location notices or labor affidavits to meet the BLM filing deadlines. Claim owners who seek to get these same documents from the county recorder offices can find this expensive and time consuming.

??? Q AND A ???

Questions asked frequently of UGMS, over the phone and over the counter:

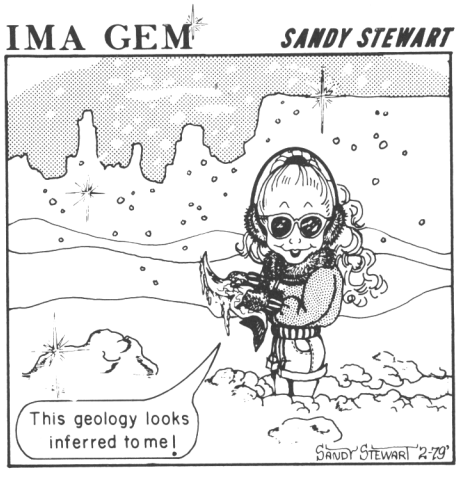
Q. Does the Utah Geological Survey sell topographic maps of Utah?

A. Sorry, UGMS does not. The topographic maps of Utah published by the U.S. Geological Survey are sold by mail and over the counter by the USGS Public Inquiries Office, 8105 Federal Building, 125 S. State Street, Salt Lake City, UT 84138, phone (801) 524-5652.

UGMS has a complete set of 15°, 7½°, and AMS 1° x 2° topographic quadrangles of Utah on file in its library, which is open to the public during UGMS working hours. We can reproduce parts of these maps for those interested.

Q. Are there topographic maps of the whole Uinta Mountains?

A. Yes. The entire Uinta Range is now covered by 7½° topographic quadrangles, scale 1 inch = 2000 feet. These are excellent guides for hunters, fisherman, backpackers and cross country skiers.



Note: Rocky, lost in a snowdrift on his way to the USGS birthday celebration, will be back in the next issue of *Survey Notes.*

UGMS REPORTS OF INVESTIGATION

Report of Investigation No. 122. Preliminary Geologic Reconnaissance of Twelve Proposed Coal-Fired Power Plant Sites, Eastern Uintah County, Utah, by James L. Rogers and Jock A. Campbell, 1978.

Report of Investigation No. 123. Slope Stability Evaluation of the Logan River Bluff below Utah State University, Logan, Utah, by Robert Klauk and Bruce Kaliser, 1978.

Report of Investigation No. 125. Carbon Dioxide Resources of Utah by Jock Campbell, 1978.

Report of Investigation No. 126. Geology for Urban Development in East Bench Area, Bountiful, Utah by James L. Rogers, 1978.

Report of Investigation No. 127. Preliminary Geotechnical study of Old St. Benedict's Hospital Site, Ogden, Utah, by Bruce Kaliser and Rajendra Puri, 1978.

Report of Investigation No. 128. Rose Park Refinery Sludge Dump, by Donald T. McMillan, 1978.

UGMS OPEN FILE REPORTS

No. 26. Environmental Assessment of Proposed Shallow Temperature Gradient Holes, Northern Utah Sites, 1978, by Peter J. Murphy.

GREAT SALT LAKE OVERVIEW

Utah Geological and Mineral Survey Bulletin 116, "Great Salt Lake - a scientific, historical and economic overview" is well under way and scheduled for completion during mid - 1979. The book will contain more than 30 articles covering the history, geology, chemistry, lake industries, hydrology, climatology, biology, engineering, and legal and planning aspects. It is anticipated that the book will also contain a section of color photographs of Peter Czerny depicting the beauty of the lake and surrounding area.

MINERAL ECONOMICS OF UTAH 1978

UTAH MINERAL PRODUCTION EXCEEDS BILLION DOLLARS AGAIN

For the third consecutive year the value of Utah's mineral production exceeded the billion dollar mark. The U.S. Bureau of Mines and Utah Geological and Mineral Survey preliminary data indicate totals reached $1,226,173,000 during 1978 but may yet reach $1.3 billion when all information is in. Production value was $1.14 billion in 1977 and $1.044 billion in 1976.

UGMS statistical studies show oil production at 35,265,000 barrels in 1978, down from 37,316,607 barrels in 1977. The 1978 total includes 3,294,000 barrels of natural gas liquids. Also included are 2,190 barrels of oil from oil shale. The first year - 1977, 1,653 barrels of oil from oil shale were produced. Value of crude oil production in 1978 was $345,603,400, up from $318,911,000 in 1977. Average price per barrel was $9.80, up from $9.30-9.70 in 1977.

Gross production of natural gas in Utah during 1978 was 80,525,000 MCF, down slightly from 80,790,745 MCF recorded in 1977. Marketed natural gas production reached 57,920,000 MCF, slightly more than 57,604 billion cubic ft. of 1977. Value was just a little more than $32,606,000.

There were 237 wells drilled in 1978, 30 less than in 1977. Of these, 75 were wildcat tests (89 wildcat wells were drilled in 1977).

Records show 10,105,000 short tons of coal were produced in Utah in 1978, valued at $252,625.000, Average price per ton of coal was $25. Production was up more than 515,000 tons from the 9,590,000 ton, produced in 1977, at an average price per ton of $23.46.

Copper production increased over the previous year. The U.S. Bureau of Mines estimates 208,580 short tons were produced in 1978, up from 194,130 tons in 1977. Value of copper produced in 1978 was $276,577,000, up from $259,357,000.

Considerable increases during 1978 in gold production and value are noted. Gold production in 1978 climbed from 1977's 210,501 ounces ($31,219,000) to 241,000 ounces ($46,438,000). Silver production, in 1977 (3,283,000 ounces), dropped to 2,822,000 ounces in 1978. Yet value of silver produced in 1978 was $15,565,000, greater than the $15,169,000 of 1977.

Lead production in 1978 was 2,820 short tons valued at $1,918,000. Zinc production during the year was 3,850 tons, valued at $2,387,000. Lead production in 1977 was 10,746 tons and zinc was 17,759 tons. Poor market conditions for the past few years have influenced lead and zinc production nationally.

Increases were recorded for clays, iron ore, lime, salt, sand and gravel, and stone.

Although uranium-vanadium production isn't released by the USBM, UGMS estimates 1978 production somewhat more than 3.9 million pounds valued at $58 million. Some 165 properties in the state are believed to have produced slightly more than 1.5 million pounds of vanadium valued at more than $16 million, and 2.4 million pounds of uranium valued at more than $42 million.

The U.S. Bureau of Mines withholds production data on 17 commodities including uranium, vanadium, beryllium, magnesium, compounds, molybdenum, phosphate, potash, and others, but total value of these was placed at $178,044,000. This compares to $147,359,000 in 1977.

UTAH MINERAL PROPERTY VALUATION GROWS

Utah's mineral property valuation for 1978 shows a slight increase over the year before despite declining trends in the copper industry and reduced oil and gas production in the state. Total 1978 assessed valuation is $460,169,541 - up from the 1977 assessed valuation of $430,542,437. It also falls short of the 1976 assessment of $501,433,798.

The 1978 figure includes a slight rise in mining properties from 1977's $215,297,103 to $227,263,006. Of that, $56,712,165 assessed valuation is on sand and gravel and other valuable deposits. 1978 oil and gas assessed valuation is $232,906,535, an increase over 1977's $215,245,334.

1978 assessed valuation on all public utilities and mines in Utah was $951,617,514. Mineral properties share the largest portion . . . 48.36 per cent . . . of the total. Assessed valuation on air line companies for 1978 was $6,151,491; gas companies, $27,864,516; pipe line companies, $20,825,049; power companies $212,069,060; railroad companies, $66,726,484; telegraph and telephone companies, $127,562,966; terminal companies, $1,113,421; water companies, $409,755; automobile, passenger and freight companies and car companies $18,725,231.

A statistical study of records of the Mineral Property Division, Utah State Tax Commission reveal that the 1978 Mine Occupation Tax (which is based on actual sales of ore/minerals/hydrocarbons by producers) reached $8,458,501 - up slightly from 1977's $8,413,065. The 1978 tax includes $6,162,168 on oil and gas production and $2,296,333 on mine production. Although copper sales decreased some $424,000 from Kennecott Copper Corporation's assessment, KCC paid $1,608,855 during 1978. Increases in uranium production brought larger payments. Atlas Minerals paid $100,137 - up from 1977's $75,248 and Rio Algom Corporation paid $113,155 from its Lisbon properties, an increase over 1977's $80,750. Iron ore production increases brought higher payments from the Iron Springs Iron mining district. United

PRELIMINARY REPORT

States Steel paid $41,720 from the Lindsay Hill mine and $70,157 from the the Mountain Lion mine. Utah International, Inc., paid $54,114, an increase over the 1977 tax of $29, 621 from the Excelsior Group mines.

Increased uranium developments in San Juan County also increased assessed valuation from $76.4 million to $90.3 million. Property decreased valuations are noted in Box Elder, Duchesne, Emery, Grand, Juab, Kane and Salt Lake counties

UTAH MINE OCCUPATION TAX

Thirty-one mining companies paid the 1978 Utah Occupation Tax from a total of 47 producing properties.

The mine occupation tax for 1978 was $8,458,501. slightly more than the 1977 total of $8,413,065, yet somewhat less than 1976's $8,571,686. Total 1978 assessed valuation was $460,169,541. Mining property valuation for 1978 was $227,263,006 and oil and gas assessed valuation was $232,906,535.

As was true the year before, Chevron Oil Company paid the highest amount, $1,015,484 from its Altamont, Bluebell and Red Wash fields. Shell Oil, in second place, paid $1,006,496 from its Altamont field. Texaco, for several years in third place, dropped to fourth and was replaced by American Quasar Petroleum Company who paid $912,564 from its Pineview field properties. Texaco's payment was $578,452 from the Greater Aneth area. Superior Oil's payment from the McElmo Creek vicinity was $455,281. Other payments exceeding $100,000 were made by Champlin Petroleum, Flying Diamond Corporation, Gulf Oil, Koch Exploration, Mapco Inc., and Union Oil of California.

Fifty-three oil and gas companies paid 1978 Utah Occupation Tax from 102 oil and gas field operations. Oil and gas and mining operations brought increases in assessed valuation to 22 of the 29 counties in Utah with the largest increase in assessments noted in Summit County. It rose from 1977's $24,527,904 to $60,792,277 as a result of increased exploration and development of the Pineview field and vicinity.

SUBSTANTIAL INCREASE NOTED IN UTAH'S MINERAL INCOME

A strong increase in monies paid to the State of Utah from mineral royalties, leases, rentals and the mine occupation tax during 1978 is noted. The U. S. Bureau of Land Management's total receipts during the year amounted to $23,776,083. The federal agency paid the State of Utah $12,037,816 during 1978 as its allocation of receipts with the largest percentage of this, $11,888,906 coming from mineral leasing revenue from royalties, leases and rentals, mostly from oil and natural gas properties. Grazing rentals and timber sales accounted for $146,924 and sale of land and materials was $1,986.

State land receipts were $8,466,289 from July 1977 to June 1978. Of this, $2,184,253 was from royalties and $6,282,036 was lease rental payments. State lands income from July 1, 1978 to December 31, 1978 was $4,419,439 including $1,216,835 in royalties and $3,202,604 from lease rentals.

For comparisons, Federal mineral receipts for 1977 were $17,238,478 and for 1976, $19,313,361, with payments to the State of Utah in 1977 of $8,710,050 and 1976 of $7,635,907. State land receipts in 1976 were $6,875,839 and in 1977, $7,736,109.

Preliminary information indicates Utah gained some 1,600 new jobs in 1978's mineral industries. Total employment averaged 16,900 jobs, up 6.3 percent from 1977. Most notable is a 23 percent employment increase in the coal mining industry. The oil, gas and related building construction segments of the mining industry gained 12.5 percent in total jobs in 1978. Mining employment in Utah represented 3.2 percent of nonagricultural employment in 1978.

PREPUBLICATION ANNOUNCEMENT

GEOLOGY, ORE DEPOSITS AND HISTORY OF THE BIG COTTONWOOD MINING DISTRICT

by Laurence P. James

The Big Cottonwood Mining District is in the central Wasatch Mountains of northern Utah, and centers on a major regional uplift whose axis lies south of Big Cottonwood Canyon.

Three types of mineral deposits occur in the district: quartz veins with native gold, silver, copper sulfide and tungsten (heubnerite and scheelite) cut older Precambrian amphibolite in the Little Willow area. Skarn deposits, or calc-silicate-magnetite bodies in carbonate rocks at intrusive contacts, show highly variable copper, gold, lead, zinc and tungsten contents. Fissure veins in later Precambrian and Paleozoic quartzites, and associated bedded replacement bodies in carbonate rocks, contain lead, silver, copper, zinc and gold in sulfide, sulfo-salt and secondary oxide minerals. These deposits have yielded by far the largest production in the area.

Mining in the district began just prior to 1870. The mining towns of Silver Springs, Argenta and Gold City flourished briefly. The most intense underground exploration followed the discovery of a 160,000 ton high grade manto at the Cardiff mine in 1914, and was accompanied by many colorful promotions and deep drainage tunnel projects.

Potential for undiscovered commercial ore exists 1) along thrust faults, near mineralized fissures of intrusive bodies; 2) in skarn along intrusive contacts. and 3) at fissure-bed intersections similar to those mined in the nearby Park City district.

Note: Bulletin 114 is ready to go to press and should be available in about 10 weeks. It includes a 4-color 1:24,000 scale map of the mining district. Price will be $6.50. If ordered by mail, add 10% ($.65) for mailing and handling.

GEOTHERMAL STUDIES BY UGMS

The UGMS is engaged in a U. S. Department of Energy (DOE) funded program to advance the utilization of the low to moderate temperature geothermal resources in the state. Currently, the program's activities include gradient hole drilling and running gravity profiles. Drilling by Peterson Brothers Drilling Company has been completed at the Warm Springs Fault area in northern Salt Lake City, Udy Hot Springs area, and partially completed at the Utah Hot Springs site north of Ogden. Sites yet to be drilled include Crystal (Madsen) Hot Springs near Honeyville and the Little Mountain-South area located west of Ogden.

Two geophysical - gravity studies to define subsurface structures are also being conducted for the UGMS by Richard C. Fox in the vicinity of the Warm Springs Fault and at Midway, near Heber. Twelve east-west lines are being run in the first area and five east-west lines in the second area.

A survey of warm water occurrences throughout the state of Utah was prepared for the DOE by H.D. Goode and has been published by the UGMS as Report of Investigation No. 129, Thermal Waters of Utah.

OFF THE PRESS
UGMS PUBLICATIONS

Bulletin 113, Geology and uranium-vanadium deposits of the San Rafael River mining area, Emery County, Utah. Price $9.00.

Bulletin 107, Geology and mineral deposits of Garfield County, Utah, has been reprinted. Price $6.50.

Map 47, Oil-impregnated rock deposits of Utah. This is a revised and up-dated edition of Map 33. Price $2.00.

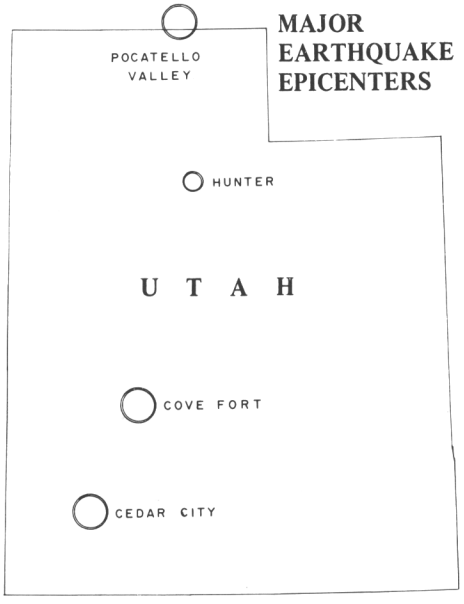
(Please add 10% for mailing charges with a minimum charge of $.50 when ordering by mail).

EARTHQUAKES FELT IN UTAH, NOVEMBER THRU JANUARY, 1979

Date	Local Time	Richter Magnitude	Location	Damage
11/29/78	11:53 PM	4.6	Pocatello Valley, Idaho, SW of Malad City	None reported in Utah
11/30/78	4:55 AM	3.4	Pocatello Valley, Idaho, SW of Malad City	None reported in Utah
11/30/78	8:45 AM	1.7	Hunter, Utah	None
12/05/78	4:24 AM	3.8	Pocatello Valley, Idaho, SW of Malad City	None
12/05/78	4:56 AM	3.0	Pocatello Valley, Idaho, SW of Malad City	None
12/09/78	7:59 AM	3.3	3 Mi. NW of Cove Fort, Utah	None
12/09/78	4:49 PM	3.3		None
12/20/78	6:46 AM	3.9	Pocatello Valley, Idaho	None
1/12/79	2:28 AM	3.3	5 Mi. NW of Cedar City, Utah	None reported

The earthquake season is off to an early start this year. Swarms of tremors have been felt in three locations in the state since November 1st. The following information, provided by the University of Utah Seismograph Station, includes those shocks registering more than 3.0 on the Richter Scale (those normally strong enough to be felt) plus the 1.7 event reported felt in Hunter on November 30.

In addition a series of small "bumps" were felt in the Salt Lake Valley, unassociated with known seismic activity. One on the afternoon of December 28 is reported to have cracked a window in Sandy.



MAJOR EARTHQUAKE EPICENTERS

MAPS

The Environmental Geology Section is making progress on several central Wasatch front maps. The geologic map is almost finished.

The U.S. Geological Survey will soon be sending us a "surface waters" map for publication. The map has been prepared by Ted Arnow and his group.

The Economic Geology section is compiling a Mineral Resources map; it will include metallic and non-metallic deposits, construction materials, petroleum potential, and geothermal resources.

UGMS A NCIC AFFILIATE

Utah Geological and Mineral Survey has become the state affiliate for Utah of the National Cartographic Information Center. In assuming affiliateship, Utah joins Texas, Arizona, South Carolina, Georgia, New Mexico, West Virginia, Minnesota, Tennessee, Pennsylvania and North Dakota in this expanding effort to provide information on topographic maps, aerial photography and satellite imagery to all users.

NCIC was formed in 1974 to take over the function of the old Map Information Office of the U.S. Geological Survey and expand it into a broader service. Agreements have been reached with the various Federal agencies who maintain cartographic activities to provide a one-stop service for information on all mapping and photographic coverage. As the data collection expands, it will include information from state and local governments and from private firms as well.

As an affiliate, UGMS will be directly involved with the Regional NCIC Center in Denver. Each affiliate is provided a complete set of current topographic maps and a microfilm record of all USGS topographic map coverage of its own and adjoining states since 1879. A catalog and microfiche index system will locate and describe all aerial photographic coverage of the state including photography being flown and planned phtotography not yet accomplished. Another microfiche index will locate and describe all satellite imagery and the imagery itself will be available for viewing on microfiche cards. These microfiche image cards will be available within three weeks of scene acquisition in contrast to the two to five month delay that existed when the imagery was placed on roll film.

NCIC is not a library or repository for photography and imagery. It is an information point where existing or planned photography and imagery in the area of interest can be easily identified for the user. NCIC can furnish to the user order blanks for the product he wants or help him to make up his order, but NCIC itself does not accept or transmit orders.

Ms. Lila Reed, UGMS librarian, will take on the added duties that NCIC affiliateship brings. By making this information service covering photography and imagery available here in Salt Lake City, UGMS expects to play an active role in expanding the use of these interesting products.

DEPARTMENT OF NATURAL RESOURCES PROPOSED FOR U.S.

An Office of Management and Budget task force has recommended that President Carter set up a new Department of Natural Resources which would include most of the present Department of the Interior plus some functions of other agencies.

The proposal, which is not yet an official administration policy, has been widely circulated for comments. Press reports said the president is likely to reach a decision on it soon.

The new DNR would get all of Interior's functions except the construction work of the Bureau of Reclamation, which would go to the Corps of Engineers along with the dam-building work of the Soil Conservation Service. DNR would also get the U.S. Forest Service from Agriculture, the National Oceanic and Atmospheric Administration from Commerce, and the watershed planning and soil and snow surveys of the Soil Conservation Service. Also included in DNR would be the preauthorization and preconstruction planning and budgeting work of the Corps of Engineers civil works, and the Water Resources Council.

The task force report said one result would be to combine the Forest Service and Bureau of Land Management in a unified "public land management component" which would also share staff and services of the Fish and Wildlife Service and the National Park Service.

from . . . COAL NEWS; No. 4451, 12-22-78

S.W. UTAH URBAN CORRIDOR GEOLOGY STUDY

The Urban and Engineering Geology Section's southwestern Utah Urban Corridor study is designed to identify, in advance of urban development, the kinds of engineering geologic problems that have harassed Cedar City. Section chief Bruce N. Kaliser pointed out the rapid growth of the towns of Santa Clara, St. George, and Washington, which are merging at an accelerated rate. The study so far has identified the following problems:

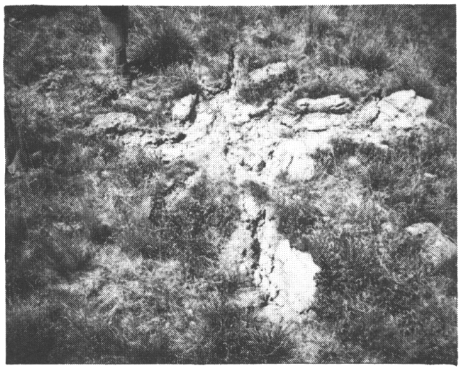
1. Voids exist in the soil material at depths to several feet below surface. Areal extent and reason for these occurrences is being sought.
2. Expansive clay shales heave pavements and deform foundations.
3. Poor foundation materials at this home (see illustration) led to deformed arch and other damage.
4. Shallow bedrock under thin alluvial soil cover boosts costs to homeowners in excavation expense.
5. Local ground subsidence is a maintenance problem that could create even greater hazards.
6. Retaining structures in poor earth foundations may create more problems then they solve.
7. Deteriorating concrete is not uncommon in new subdivisions.

Shallow ground water and earth materials are being explored with the UGMS auger to define the magnitude of these problems. The study is scheduled for completion this year.

This deformed arch is the result of poor foundation materials.

WHAT'S IT?

A mysterious feature was observed in the Little Malad River Valley during a routine field check following the 7-29-78 magnitude 3.5 earthquake in northern Utah. Illustrated here is the cruciform feature, entirely undisturbed. It is about 14 feet in diameter; furrows with longitudinal cracks radiate from a central depression. Clods of topsoil, hurled some 14 feet beyond the limits of the feature, were usually overturned.



No explanation has been found, despite interviewing of local residents and farmers. It appears to have no relationship to the earthquake, nor is any geologic cause believed possible. UGMS Chief Engineering Geologist Bruce N. Kaliser speculates that an object dropping from an aircraft is the only possible explanation.

To his knowledge, aeronautical officials, though informed, have not visited the site.

MEXICAN EARTHQUAKE

Bruce N. Kaliser, Chief Engineering Geologist, was attending the Second International Conference on Microzonation in San Francisco at the time of the November 29 Mexican earthquake (magnitude 7.8, U.S.G.S. Earthquake Information Center surface wave determination). The epicenter was on the coast of the State of Oaxaca. Immediately following the event Kaliser met the team from the Earthquake Engineering Research Institute in Mexico City, where damage was reported and 8 people killed. Then Kaliser proceeded to Oaxaca. Primitive transportation and a long journey were required to reach the epicentral area, near Puerto Escondido, a very small beach front resort town. Here damage was, surprisingly, found to be light.

Magnitudes recorded in Mexico and those recorded in this country varied widely. Anomalously little damage resulted from such a major event. Newspapers everywhere reported false damage and casualty claims. Where significant building damage did occur in Mexico City, it was largely confined to structures already distressed by differential settlement of the ancient lake bed on which Mexico City is built.

LAKE BEGINS ANNUAL RISE

The level of Great Salt Lake bottomed out during November and began its annual rise. Gage heights recorded by the U.S. Geological Survey are:

Date	Boat Harbor (south arm)	Saline (north arm)
Nov. 1, 1978	4198.40	4197.25
Nov. 15	4198.40	4197.25
Dec. 1	4198.50	4197.25
Dec. 15	4198.55	4197.35
Jan. 1, 1979	4198.65	4197.50
Jan. 15	4198.75	4197.60

The low level of the lake was 0.20 foot lower than the lowest level reached December 1, 1977. The level on January 15, 1979 was 0.10 foot lower than on the same date the previous year.

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